

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of: HOLLOWBUSH, R.

Serial No.: 10/814,401

Group Art Unit: 2628

Filed: March 31, 2004

Examiner: Chow, J.

For: METHOD AND APPARATUS FOR ANALYZING  
DIGITAL VIDEO USING MULTI-FORMAT DISPLAY

Confirmation 5381

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

BRIEF ON APPEAL

Applicant hereby submits its Brief on Appeal from the final rejection of claims 1, 3-11, 13 and 14, mailed July 25, 2008. A timely Notice of Appeal was filed with the required fee on October 23, 2008. The fee due upon filing this Brief on Appeal together with a one month extension is submitted by EFS charge to a deposit account. Please charge any underpayment or credit any overpayment to Deposit Account No. 04-1679.

Respectfully Submitted,

Date: January 21, 2008

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Docket No.: D4781-78 [ L-048 ]

**(1) STATEMENT OF THE REAL PARTY IN INTEREST**

The real party in interest is Harris Corporation, a corporation of Delaware, having a place of business at 1025 W. NASA Boulevard, Melbourne, FL 32919. Harris Corporation is the successor to Videotek Inc., the assignee of record.

**(2) STATEMENT OF RELATED CASES**

There are no related cases as defined by 37 C.F.R. §41.37(g).

**(3) JURISDICTIONAL STATEMENT**

The Board of Patent Appeals and Interferences has jurisdiction under 35 U.S.C. §134(a). The appeal is from the final rejection of claims 1, 3-11, 13 and 14, mailed July 25, 2008. The notice of appeal and required fee were submitted October 23, 2008. This Brief is submitted, with the required official fees prior to January 23, 2009, and with a one month extension and fee under 37 C.F.R. §1.136(a).

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#### **(6) RESERVED**

## **(7) STATUS OF AMENDMENTS**

No amendment after final rejection was filed.

## **(8) GROUNDS OF REJECTION TO BE REVIEWED**

1. Patentability of claims 1, 3-8 and 12 under 35 U.S. C. 103(a) over Krishnamurthy et al. (US 5,469,188) in view of Yamazaki et al. (US 2003/0142209) and Abecassis (US 5,610,653) and Lau et al. (US 6,525,746).
2. Patentability of claim 11 under 35 U.S. C. 103(a) over Krishnamurthy et al. (US 5,469,188) in view of Abecassis (US 5,610,653).
3. Patentability of claims 13 and 14 under 35 U.S. C. 103(a) over Krishnamurthy et al. (US 5,469,188) in view of Yamazaki et al. (US 2003/0142209) and Abecassis (US 5,610,653) and Lau et al. (US 6,525,746) and McVeigh et al. (US 2002/0141615) and McCalla et al. (US 2004/0031061).

In this appeal, applicant does not separately argue against the rejections of claims 9 and 10. Claims 9 and 10 depend from and are believed allowable together with claim 1, and may stand or fall with the outcome of the appeal as to claim 1.

## **(9) STATEMENT OF FACTS**

The application has proceeded through two continued examinations encompassing several official actions. Although the applicant has narrowed the claims and presented arguments, the examiner has continued to reject the claims as obvious under 35 U.S.C. §103, relying substantially on the combination of

Krishnamurthy et al. (US 5,469,188) and Lau et al. (US 6,525,746), but also citing secondary references as discussed herein.

Krishnamurthy is cited in the final rejection for teaching a display containing a picture area and areas for other information. Lau is cited for teaching subordinate windows. Krishnamurthy discloses a video data analyzer and Lau discloses a video editor. Both Krishnamurthy and Lau disclose work stations that treat static frames from a video signal, i.e., the operator processes only one frame at a time.

In the final rejection of July 25, 2008 from which appeal is taken, the examiner acknowledges:

*Krishnamurthy did not expressly disclose the display of information comprises a repetitively composed formatted display of images that is changed over time from one mode of display of information to an other mode of display of information, as the video input signal changes in time, and a user selects via the control input at least one selection criterion applied to the video signal to cause a change in the formatted display of images from said one mode to said other mode.*

Id., p. 5, lines 4-9.

However the examiner concludes that as combined with Abecassis, Yamazaki, McVeigh and/or McCalla, the claimed invention would have been obvious.

Yamazaki discloses a surveillance system that detects a color in the content of a live surveillance picture and controls the camera (by pan and zoom) to

enlarge and track the part of the view where the color is found. The color that Yamazaki detects is the expected color of a human face. In short, Yamazaki detects a face of a person found in the field of view, homes in on the face, and tracks it. This is done by adjusting the aim and the magnification of the camera. A magnified view of a face is useful for identifying the corresponding person.

Abecassis is cited as disclosing the idea of selecting an item at a particular spot in a picture to be tracked and zoomed (shown enlarged) as the relative position of item changes. The passage cited in the rejection is col. 41, line 46 to col. 42, line 23. The selected item might be a player in a ball sport or a car in an auto race. Abecassis teaches that a video editor can preliminarily insert markers into the signal for tracking (such as the numbers of race cars), or that the items can be followed in the picture by software that is sensitive to a distinct shape and/or color in the picture content. See col. 42, lines 42 – 62. At the lower right side of Fig. 10D, Abecassis shows full picture in a small window overlaid on an image of a rectangular area of the picture that is zoomed to fill the screen behind the small window.

McVeigh also tracks a moving object that is selected in a picture by determining a color on the object and following movement of that color. McVeigh attempts to follow a color under changing lighting conditions.

McCalla teaches a system that reverts to a default presentation when no input is received for a predetermined time.

An additional reference that was mentioned with respect to claim 10 is Yanker (US 5,187,776). Yanker discloses providing a subordinate window on a picture screen and a manually movable cursor. The zone around the cursor can be zoomed to occupy the full screen, while the full screen content is reduced into the subordinate window. Claim 10 is not argued herein apart from claim 1, so the Yanker reference is not in issue.

#### **(10) ARGUMENT**

Each rejection of the claims relies on US 5,469,188 - Krishnamurthy. One can see in Krishnamurthy's Fig. 2 a display area that is laid out such that there is an area 32 devoted to showing a picture, an area 34 for a plot and an area 37 for numeric data. Crosshairs 36 are positionable by the user to select a pixel position. When desired, the user can display an alternative version of the picture (Fig. 3). In the alternative version, the picture is shown in gray scale, except for pixels having IRE values above a threshold, which are identified by applying a distinct color to those pixels. (Col. 3, line 41-50). The IRE level is a measure of the relative amplitude of a composite video signal, and may be considered the sum of luminance and color saturation.

In Krishnamurthy, the user has a choice of displays, but it is wholly manual, and is limited to the foregoing two alternatives. The user can select the fixed multi-format display of Fig. 2, with a static image frame 32, a graphic plot 34 and

numeric data 37; or the user can select the display of Fig. 3 presenting the static image alone, with pixels exceeding the threshold IRE level being distinctly colored.

Krishnamurthy does not permit the user to alter these two alternatives.

Krishnamurthy does not suggest that one might automatically switch between the alternatives upon the occurrence of some event. There is no logical reason to consider the potential for automatic operation, because Krishnamurthy operates on static frames and not on a moving picture video signal.

According to the examiner, applicant's invention is met or made obvious by combining a static frame video analyzer (Krishnamurthy), subordinate windows in a video editor that also uses static video frames (Lau), plus moving picture item tracking and zoom presentations as in Yamazaki (facial color) or Abecassis (any element distinguished by marking, shape or color).

What is missing from the combination of prior art citations, and an aspect that renders novel and unobvious the invention claimed as a whole, is the concept of a user selecting among optional formats in a video analyzer, wherein user-selected display formats are adopted automatically when user-selected criteria are detected in the signal. The formats are user-selected collections, including analytical information such as graphs, data and the picture itself, or a selected part of the picture. This is the manner in which applicant allocates a screen display to informative displays that the user selects because the user considers the collected



parts of the formatted display to be pertinent to the user-selection criteria, and helpful to the user when displayed together.

Applicant's apparatus is an article of test equipment that permits the user to associate selection criteria (such as digital video data error) with a distinctly formatted presentation to which the device switches automatically when user-selected criteria are met. There is no reason on the record to explain how a person of ordinary skill would expect a beneficial combination to result from applying moving pictures to static frame test equipment. The expectation would be that the test equipment indications would change as rapidly as the moving picture frame rate, making it impossible to analyze the frames. Moreover, there is no reference or reasoned explanation on the record to provide, for ostensible combination with a static picture field analyzer, the concept of a user-selected criteria associated with a user-selected display format, i.e., a configuration of displayed elements in predetermined zones of the display to which the device switches automatically. This aspect is lacking in the combination rejection. There is no reason on the record to explain or justify how the person of ordinary skill, with some expectation of predictable success, could combine information from the cited references with their common knowledge to reach the invention claimed.

Lau - US 6,525,746 discloses windows that can be opened and resized by the user. One example (Fig. 3) has a video window, a zoom window (enlarged local area of the image) and a time-line window. The selected window in Lau is

obtained by manually switching from one window to another, similar to the way in which one selects an active window in Microsoft Windows.

The differences between independent claim 1 and the prior art include provisions for automatic switching to a new format for a test equipment display, on the fly, and an ability for the user to predetermine the format to which the display will be switched when predetermined criteria are met. These arrangements are such that aspects of the display formatting (namely what test display presentations are to appear on the display and where they are to appear) are changed automatically as conditions in the video signal change. User input determines the formatting that will be adopted when the criteria are met.

In the rejection of claim 1 under 35 U.S.C. §103, Krishnamurthy and Lau are cited in combination with US 2003/0142209 – Yamazaki and US 5,610,653 – Abecassis, both of which involve automatic tracking of elements that appear in the content of a moving video picture. In Yamazaki, a security camera has pan, tilt and zoom controls. When Yamazaki detects skin color in a wide angle view, the device zooms in on the area, which normally is the face of a person seen in the security camera view, and tracks the person's face by controlling the magnification and aim of the camera.

Abecassis allows the user to identify a target element appearing in the content, such as a car in the moving picture of a car race or a pass receiver in the moving picture of a football game, which can then be zoomed by enlarging the

local picture area to fill the screen area. User input defines the location at which the target is to appear. If the location is off center in the direction of target movement, the camera seems to lead the moving target.

In the official action, claims 9-11 are addressed under the general statement that claims 1, 3-8 and 12 are rejected over Krishnamurthy, Yamazaki, Abecassis and Lau. Applicant contends that the rejection of claim 1 over these references under 35 U.S.C. §103 is without merit, but agrees that the rejection of claims 9-11 may stand or fall with the rejection of claim 1. For claim 9, Krishnamurthy and Lau are combined, wherein Lau is cited for using part of the display area for a zoomed portion and another part for the full display content. (See Lau at Fig. 3). For claim 10, Krishnamurthy, Yamazaki, Abecassis and Lau are combined with Yanker, wherein Yanker is cited for identifying an area of a full image using a cursor, and zooming that area. (See Yanker Fig. 3, for cursor 14, viewport 12, and large/small images 18.) For claim 11, Krishnamurthy and Abecassis are combined, wherein Abecassis is considered to disclose a specialized image processor for concurrently handling full image and zoom areas. (See Fig. 10D of Abecassis for images and Fig. 5 for separate system and video processors 511, 513). These claims nevertheless are allowable due to their dependence on claim 1. There is no reasoned basis or explanation of the combination steps and/or the nature of perceptions of likely successful results to be obtained by selective combination of parts of all these prior art references.

Applicant's users are able to select a format that relates to the data error or other criteria. In a default condition (absent a data error), the user might decide simply to show the content of the picture. A different user might choose to display a standard vectorscope polar plot (see Fig. 3, item 72) and/or an amplitude/time oscilloscope plot (Fig. 3, item 74). The specific criteria for triggering a change to a user-selected format, and the nature of the format to be assumed (i.e., the types of diagnostic information to appear in available areas of the display) are both up to the user. In the disclosure, an example of a triggering event (user selected criteria) is a color gamut error. A color gamut error is an illegal numeric value in the color-defining variables for a pixel. A gamut error can arise, for example, when algebraically converting between RGB and YCbCr color encoding variables. The user confronted with a gamut error may choose to choose automatically to change to a display that contains numeric information, graphic color information, etc. (See applicant's Fig. 4).

It is the ability to set up a display format to deal with the detected criteria that makes the invention a highly useful article of test equipment. The display format is the selection of what test information and graphics are to appear on the screen and where they are to appear. This aspect is defined in applicant's claim 1. There is nothing in the prior art that remotely resembles this sort of switching of formats to a user-selected format associated with a user-selected switching criteria.

The prior art of record discloses video processors that accept video signals and analyzers that accept static frames but these are not routinely subject to a predictably successful combination. Krishnamurthy discloses a test apparatus for a static frame wherein there are zoom capabilities and tabular display of numeric pixel color information. Krishnamurthy fails to disclose or suggest a device that is triggerable to shift to a different format when a user-selected criteria is met. There is no reason to consider, in a static frame environment, how one might use such an analyzer to deal with a rapidly changing input.

The prior art references taken in combination lack a controller coupled to the video processor and to at least one control input, *wherein a user selects via the control input at least one selection criterion applied to the video signal to cause a change in the formatted display of images from said one mode to said other mode, and wherein the user selects via the control input a selection of the display elements to be included in the display composed by the video processor when the selection criterion is met.* This subject matter is particularly recited in claim 1 and is not shown to have been known or obvious.

The examiner has erred by concluding that Lau, Yamazaki or Abecassis disclose shifting to a different format upon a criteria being met, and/or the examiner has failed to provide a reasoned explanation why a person of ordinary skill might perceive a probability of successful outcome by providing such a capability. There is no logical explanation that bridges between devices that play

video at speed and devices that analyze frames. Even if such a combination might be established, there remains no disclosure or suggestion of permitting the user to define selection criteria and to associate with the criteria the corresponding display formats that are to be assumed specifically when the selection criteria are met.

Lau has provision for subordinate windows. Yamazaki and Abecassis have provision for zooming, but there is no suggestion to read into Lau's manual opening of user-selected windows the possibility of switching to an alternative display format when a criteria is met, and there is no disclosure in Yamazaki or Abecassis of a switched change in the display format, i.e., the configuration of what sort of information is mapped to what zones of the display screen. Applicant's claimed invention not only has the aspect of selected formats but also has the aspect of switching to a format that the user has associated with a selection criterion, and the aspect of doing so on the fly.

According to the final rejection at the end of page 5 up to page 6, line 3, Yamazaki is considered to teach or suggest a change of display format. Yamazaki actually discloses a change of picture content, produced by zooming the lens of the video camera, from a wide angle full body view to a telescopic view showing the target's face. There is no basis to conclude that the format of the display is changed by changing the aim of the camera and the magnification of the content. The display in either case is simply showing the picture produced by the

video camera, i.e., the content of the video. No change of display format results from a change in picture content. Even if one assumes that magnification of the camera lens causes a change in the display format, which applicant contends is erroneous, applicant's invention claimed as a whole is not met by Yamazaki, which does not give the user a choice of triggering criteria that are to result in switching to a chosen one of plural alternative display formats.

There is no question that zooming in on a face in a camera's view makes the item larger in the collected image that this might make it easier to identify the owner of the face or to grab attention to the face (in fact all portions of the image except the face are cropped). But that does not change the format of the display or provide the user with a way to associate different formats with different criteria that may arise in the image characteristics.

In the official action, the examiner acknowledges that Krishnamurthy does not disclose the capability of a user to select via the control input a selection of the display elements to be included in the display composed by the video processor when the selection criterion is met. The official action states at page 6, lines 8-13 that Lau discloses various display windows, a main window within which the user can open subordinate windows that may be opened, closed and resized, and concludes that it would have been obvious to modify Krishnamurthy to allow the display window (i.e., the picture portion), the status window and the zoom window to be opened, closed, moved and resized selectively. The stated motivation is

*"this would give the user increased flexibility in viewing the desired information on a display."* Applicant's invention is not directed to opening, closing and resizing windows at any time or for any purpose (i.e. for flexibility). The point of applicant's invention is for users to pre-plan, i.e., to choose prospectively what display format will be adopted when a given user-selected criteria arises. The user can pre-plan different display formats for different situations. This aspect is not met by Lau.

A person of ordinary skill who sought to modify a combination of Krishnamurthy and Lau would have no expectation that pre-programmed associations of display formats with format switching criteria would provide flexibility. In fact the opposite logically should be expected. When the criterion arises, applicant's system seizes control and reconfigures the display to the preprogrammed display configuration (format) associated with the criteria. The user has no flexibility other than to reprogram the display configuration that will be assumed, without any flexibility, the next time that the criteria should be met.

All the rejections of record are made under 35 U.S.C. §103 based on a combination of Krishnamurthy and selected aspects of one or more other prior art references. Section 103 states that invention, although novel, may not be patented if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.



Guidance for assessing obviousness was provided by the US Supreme Court in KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1734, 82 USPQ2d 1385, 1391 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. The court substantially ratified the test of obviousness from Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966).

In KSR, the Supreme reaffirmed principles based on its precedent that the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

The operative question in this “functional approach” is thus whether the improvement is more than the predictable use of prior art elements according to

their established functions. In order to apply this test, one must consider whether it is predictable that a modification will produce beneficial results.

In KSR, the Supreme Court stated that there are “[t]hree cases decided after Graham [that] illustrate this doctrine.” Id. at 1739, 82 USPQ2d at 1395. “In United States v. Adams, ... [t]he Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.” Id. at 1739-40, 82 USPQ2d at 1395. “Sakraida and Anderson’s-Black Rock are illustrative – a court must ask whether the improvement is more than the predictable use of prior art elements according to their established function.” Id. at 1740, 82 USPQ2d at 1395.

The Court noted that “[t]o facilitate review, this analysis should be made explicit.” Id., citing In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”).

In the present case, there is no basis to find the invention claimed as a whole in the collected prior art references. The references lack any suggestion of the important concept of a user-selected association between selection criteria and display format. This aspect is clearly defined in claim 1 and is not found in the prior art. Nor does the record reasonably explain how it might have been obvious

based on articulated reasons explaining predictable success, to alter the prior art to meet the invention. There is no explanation, reasoning or arguable basis to believe that a step by step progression of selections of prior art features, combinations of features, and modifications beyond the prior art, would be within the reach of a person of ordinary skill due to perceptions that each such selection, combination and/or modification would be likely, if attempted, to produce beneficial effects. For these reasons, the rejection of claim 1 and the claims depending from claim 1 should be reversed.

Claim 11 was rejected over a combination of Krishnamurthy and Abecassis. At page 9, line 13 acknowledges that Krishnamurthy does not that the video processor allots the formatted display to accommodate a change in the formatted display of images from said one mode to said other mode. The rejection continues to say that Abecassis (which is directed to tracking moving elements in the content of an image) discloses a specialized microprocessor 511 (Fig. 5) responsive to user zoom commands. The stated conclusion is that it would be obvious to modify Krishnamurthy to incorporate a processor that changes from one mode of display, such as a full picture, to another mode, such as a zoomed image. The reason for the modification is asserted to be that a specialized processor would be faster and [more] efficient than using the regular CPU.

The rejection of claim 11 is unwarranted because it assumes erroneously that simply marking off of a zone in an image for zooming, and zooming that zone

to fill the screen, meets the invention defined as a whole by claim 11 and claim 1, from which claim 11 depends. Claim 11 recites that the video processor allots the formatted display to accommodate the change in the formatted display of images from one mode to another mode. This claim defined that the video processor accommodates mapping of the selected display elements into the display area. The processor accommodates the user's selections of one or more of a full picture, a zoomed portion, a report, and a subset of these elements, the processor fitting the selected elements to the screen.

What is not found in either Krishnamurthy or Abecassis or in any predictably successful extension or modification, is a repetitively composed formatted display of images that is changed over time from one mode of display of information to an other mode of display of information, as the video input signal changes in time because a user selects via the control input at least one selection criterion applied to the video signal to cause a change in the formatted display of images from said one mode to said other mode, and wherein the user selects via the control input a selection of the display elements to be included in the display composed by the video processor when the selection criterion is met. Even given a combination of Krishnamurthy and Abecassis, the user selects and engages a zoom mode and window overlay arbitrarily. The user has no capability of entering a criteria that, when met by the video signal, will cause the apparatus to reformat the display as a result.

Applicant maintains herein that the rejection has not addressed the aspects that are claimed, including the aspect that the a user predetermines the selected switching criteria that will trigger the apparatus to change from one format or display configuration to another when the criteria arise in the display, and the user also selects the format that will be employed. The prior art does not meet limitations that are claimed, and thus does not meet the invention claimed as a whole.

Regarding claims 13 and 14, the official action acknowledges that Krishnamurthy does not disclose the controller and the video processor are operable to coordinate between automatic and manual selection of the area of particular scrutiny wherein one of said automatic and manual selections supersedes the other for a limited time. This is a substantial understatement because Krishnamurthy's apparatus is limited to the display of static images and is not arranged to make manual and automatic selections in the manner claimed. The official action asserts that Krishnamurthy automatically sets an alarm flag if the number of errors on an image frame exceeds a threshold (apparently suggesting that activating an alarm flag that is permanently present in the display but may be switched on and off, is display of a different format); that McVeigh tracks a color through a series of frames (apparently suggesting that tracking an element by color is triggering based on a selection criteria); and that McCalla discloses automatically reverting to a default display if there is no input after a

certain amount of time. These disclosures do not add up to the invention claimed as a whole by applicant.

Applicant acknowledges that Krishnamurthy's display content has an alarm flag that might be set or not set in different circumstances. McVeigh indeed discloses tracking an object by finding its color in successive frames. And McCalla like various other devices with displays has a timeout function that resumes a default condition if no activity occurs for a time. However applicant does not find in the disclosure of such aspects any explanation as to how the elements are perceived by the person of ordinary skill as likely in combination to produce beneficial results, or how the separate elements could or should be combined according to such perceptions to resemble the invention of claim 13.

There are distinctions stated in the claims regarding a video input signal that changes in time. It is noted that Krishnamurthy and Lau do not involve moving pictures.

There are distinctions stated in the claims regarding a formatted display having user-selected display elements that are automatically fitted to the screen area when user-selected criteria arise. These aspects are not found or suggested in the prior art.

The term "format" is defined in Merriam Websters Collegiate Dictionary, 11<sup>th</sup> Ed., 2003 as (1) the shape, size and general makeup (as of something printed); (2) general plan of organization, arrangement, or choice of material (as for a

television show); (3) a method of organizing data (as for storage) <various file ~[format]s>. Applicant maintains herein that the definition of format is not properly extended to changeable content as is obtained when a camera is zoomed, but there is no change in the aspect of the output of the camera being shown as the output of the display. There are zoom windows found in certain of the references (Abecassis) but they are not elements of a formatted display configuration, that is designed according to user selections associated with a criteria and assumed automatically when that criteria arises in the signal content. There is no basis to conclude that the claimed invention is obvious.

The prior art cited in the rejection of the claims contains one category of disclosures that concern consoles or workstations for program editors who operate on static frames. These apparatus present images and data to an artist or video editor when making frame-by-frame changes in the program content. This category includes Krishnamurthy, the primary reference, and Lau, wherein certain manual selections can be made by the operator.

A different category of cited prior art comprises devices such as active video surveillance equipment having camera controls (pan, zoom, tilt) coupled with image analysis software, operable to identify and then track features that may arise in the content of a video image and move around in the field of view. Unlike the first category, this equipment generates and operates on video pictures to cause the content to change in time (usually many times per second). The cited

references are Yamazaki, Abecassis and McVeigh. The typical object is to find the a person or thing and to enable zooming in so as to alter the content of the shot.

Applicant acknowledges that in certain of the references, one can simultaneously display zoom windows and a full picture. However, this is not a user-defined format associated with a selection criteria specified by the user, which format is assumed automatically when the criteria arises in the signal content as claimed.

In McCalla, an interactive television display offers alternative program selections in response to user input. After a period of inactivity (lack of user input), the McCalla device can time out and cause the display to revert automatically to a default program or view. This disclosure likewise does not even remotely concern providing a selection criteria that the user specifies and associates with the criteria so that a new format is assumed when the selection criteria is met. McCalla simply times out and reverts to a default display condition in much the same way as a conventional screen saver

Applicant's disclosure details and the claims define video test equipment that might be used in a television production or broadcast facility to monitor live, recorded and/or broadcast signals. In the state shown in Fig. 3, the display elements composed on the display are an amplitude-versus-time oscilloscope plot (74), a vectorscope polar plot (72), tabular pixel data values (62), a full picture and



a zoomed area selected manually via a cursor. In the state shown in Fig. 4, which according to the disclosure might be assumed if the selection criteria includes color gamut errors (illegal color values that sometimes occur when converting between RGB and YCbCr), the output has been switched and reformatted to now include a polar display 112 of composite excursion versus hue angle and the cursor and zoom area have been commandeered to examine the offending pixel(s). The prior art does not involve test equipment, user selected criteria pertinent to test analysis, format configurations associated with user criteria, automatic switching to the associated format when the criteria are met, or coordination between switching to different formats as claimed.

The differences between the invention and the prior art include switching to generation and display of a formatted user-selected set of display elements, automatically when meeting user-selected signal criteria, and wherein the user selections are the determining factors for what elements are displayed and what criteria are associated with them.

The examiner considers these aspects to have been obvious according to the prior art of record and as stated in claims 1 and 3-8 (claim 12 is also mentioned in the statement of the rejection under 35 U.S.C. §103, but claim 12 was canceled.) Applicant contends that the differences between the invention of claims 1, 3-8, 13 and 14 are such that the invention claimed as a whole would not have been obvious to a person of ordinary skill.

There is no proper basis of record to conclude that the invention claimed as a whole would have been obvious. On the contrary, the differences between the invention and the prior art are such that the subject matter claimed as a whole would not have been known or obvious to a person of ordinary skill. Accordingly, applicant requests that the final rejection be REVERSED and remanded to the examiner with instructions to allow the pending claims.

Respectfully Submitted,

Date: January 21, 2009

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Docket No.: D4781-78 [ L-048 ]

## **(11) APPENDIX**

### **CLAIM SECTION**

1 1(rejected). An apparatus for use in analyzing video images,  
2 comprising:

3 a video input signal providing a video signal to be analyzed, the video  
4 input signal including at least one of successive picture frames and fields  
5 containing a video picture that changes in time;

6 a video processor operable to produce a display of information on a  
7 display device at least partly from the video input signal, wherein the  
8 display of information comprises a repetitively composed formatted display  
9 of images that is changed over time from one mode of display of  
10 information to an other mode of display of information, as the video input  
11 signal changes in time, wherein said modes of display of the information  
12 comprise different selections of display elements, each of the different  
13 selections comprising one or more of:

14 a full representation of the video picture contained in the video  
15 input signal, selectively presented so as to occupy at least a portion  
16 of a display area of the formatted display;

17 a zoom image including an area of particular scrutiny in said  
18 video picture, selectively presented so as to occupy at least a portion  
19 of the display area of the formatted display;

20 a report of video data characteristics of at least one point within  
21 said area of particular scrutiny;

22 a subset of said full representation, said zoom image and said  
23 report; and,

24 wherein a controller is coupled to the video processor and to at least  
25 one control input, wherein a user selects via the control input at least one  
26 selection criterion applied to the video signal to cause a change in the  
27 formatted display of images from said one mode to said other mode, and  
28 wherein the user selects via the control input a selection of the display  
29 elements to be included in the display composed by the video processor  
30 when the selection criterion is met.

2(cancelled).

1 3(rejected). The apparatus of claim 1, wherein the video processor  
2 has a display mode wherein the full representation of the video picture, the  
3 zoom image and the report of said video data characteristics are presented  
4 at different parts of the display device and present progressively smaller  
5 parts of the area of particular scrutiny.

1 4(rejected). The apparatus of claim 3, wherein the report includes a  
2 tabular display of data respecting pixels at the area of particular scrutiny.

1 5(rejected). The apparatus of claim 4, wherein the tabular  
2 display of data includes sample location information and color sample data.

1 6(rejected). The apparatus of claim 5, wherein the tabular display of  
2 data includes a color swatch demonstrating the color sample data.

1 7(rejected). The apparatus of claim 1, wherein the video input signal  
2 contains a digital video signal with successive picture frames and the video  
3 processor produces the formatted display repetitively for increments of at  
4 least one frame, from one of discrete sample data and discrete color state  
5 elements defining pixels in the video input signal.

1 8(rejected). The apparatus of claim 1, wherein the video processor  
2 produces the formatted display for increments of at least one frame from  
3 one of discrete sample data and discrete color state elements defining  
4 pixels in the video input signal.

1 9(rejected). The apparatus of claim 1, wherein the video processor is  
2 operable to resize at least part of the video picture for presentation in part

3 of an area of the formatted display that occupies less than a full area of the  
4 formatted display, and wherein resizing by the video processor includes at  
5 least one of recalculating pixel values, sampling pixel values and reading  
6 out selected pixel values.

1 10(rejected). The apparatus of claim 1, wherein the control input  
2 is operable by a user manually to select from the video input signal an area  
3 to be the area of particular scrutiny, and wherein the video processor is  
4 operable simultaneously to present the video picture and the zoom image  
5 including the area of particular scrutiny, in different areas of said formatted  
6 display.

1 11(rejected). The apparatus of claim 1, wherein the video  
2 processor allots the formatted display to accommodate said change in the  
3 formatted display of images from said one mode to said other mode.

12(canceled).

1 13(rejected). The apparatus of claim 1, wherein the controller and  
2 the video processor are operable to coordinate between automatic and  
3 manual selection of the area of particular scrutiny, wherein one of said  
4 manual selection and said automatic selection supersedes an other of said  
5 manual selection and said automatic selection for a limited period of time

6 after said changing of the formatted display by the video processor when  
7 the selection criterion is met.

1 14(rejected). The apparatus of claim 13, wherein the selection  
2 criteria for said automatic selection include a color gamut value criterion  
3 having at least one threshold value such that a value meeting the threshold  
4 value criterion is selected for particular scrutiny.

15-25(canceled).

## CLAIM SUPPORT AND DRAWING ANALYSIS SECTION

1. An apparatus for use in analyzing video images (**p8, ¶29, Fig. 1**), comprising:

a video input signal (**22, Fig. 1**) providing a video signal to be analyzed, the video input signal (**22**) including at least one of successive picture frames and fields containing a video picture that changes in time (**p5, ¶15; p16, ¶57, p. 24, ¶82; etc.**);

a video processor (**p6, ¶19, 30, Fig. 1**) operable to produce a display of information on a display device (**Fig. 3, Fig. 4**) at least partly from the video input signal (**p23, ¶79**), wherein the display of information comprises a repetitively composed formatted display of images (**42, 44, 52, 72, 74, Fig. 1**) that is changed over time from one mode of display of information to an other mode of display of information (**Fig. 3 vs. Fig. 4**), as the video input signal changes in time (**p10, ¶34**), wherein said modes of display of the information comprise different selections of display elements (**p9, ¶33, 42, 44, 52, 72, 74, Fig. 3, Fig. 4**), each of the different selections comprising one or more of:

a full representation (**see quadrant 40, Figs. 1, 3 and 4**) of the video picture (**p7, ¶22**) contained in the video input signal (**22, Fig. 1**), selectively



presented so as to occupy at least a portion of a display area of the formatted display (**quadrant 40, Figs. 1, 3, 4**);

a zoom image (**44, Figs. 1, 3, 4**) including an area of particular scrutiny (**at cursor 42**) in said video picture (**p7, ¶22**), selectively presented (**p14, ¶50**) so as to occupy at least a portion of the display area of the formatted display (**p8, ¶29; p13, ¶¶46-47**);

a report of video data characteristics (**area 48, Figs. 1, 3, 4**) of at least one point within said area of particular scrutiny (**p8, ¶29; p15, ¶54; p16, ¶56; etc.**);

a subset of said full representation (**p7, ¶22**), said zoom image and said report; and,

wherein a controller (**28, Fig. 1, p7, ¶23**) is coupled to the video processor and to at least one control input (**p17, ¶60**), wherein a user selects via the control input (**25, p9, ¶32; p10, ¶35**) at least one selection criterion (**p18, ¶64**) applied to the video signal to cause a change in the formatted display of images from said one mode to said other mode, and wherein the user selects via the control input a selection of the display elements to be included in the display composed by the video processor when the selection criterion is met (**p20, ¶71**).

2(canceled).

3(rejected). The apparatus of claim 1, wherein the video processor has a display mode (**¶¶ 18-20**) wherein the full representation of the video picture (**in quadrant 40, Figs. 1, 3, 4**), the zoom image and the report of said video data characteristics are presented at different parts of the display device (**Figs. 1, 3, 4**) and present progressively smaller parts of the area of particular scrutiny (**40 ... 44 ... 42 ... 52**).

4(rejected). The apparatus of claim 3, wherein the report includes a tabular display of data (**area 48**) respecting pixels at the area of particular scrutiny (**42**).

5(rejected). The apparatus of claim 4, wherein the tabular display of data includes sample location information (**52**) and color sample data (**58, 62**).

6(rejected). The apparatus of claim 5, wherein the tabular display of data includes a color swatch (**54**) demonstrating the color sample data.

7(rejected). The apparatus of claim 1, wherein the video input signal contains a digital video signal (**¶54**) with successive picture frames (**¶57**) and the video processor produces the formatted display repetitively for

increments of at least one frame, from one of discrete sample data and discrete color state elements **(¶56)** defining pixels in the video input signal.

8(rejected). The apparatus of claim 1, wherein the video processor produces the formatted display for increments of at least one frame **(¶57)** from one of discrete sample data and discrete color state elements defining pixels in the video input signal.

9(rejected). The apparatus of claim 1, wherein the video processor is operable to resize at least part of the video picture for presentation in part of an area of the formatted display **(¶¶39, 40, 43)** that occupies less than a full area of the formatted display, and wherein resizing by the video processor includes at least one of recalculating pixel values, sampling pixel values and reading out selected pixel values.

10(rejected). The apparatus of claim 1, wherein the control input is operable by a user manually to select from the video input signal an area to be the area of particular scrutiny, and wherein the video processor is operable simultaneously to present the video picture and the zoom image including the area of particular scrutiny, in different areas of said formatted display **(¶¶40 – 46)**.

11(rejected). The apparatus of claim 1, wherein the video processor allots the formatted display to accommodate said change in the formatted display of images from said one mode to said other mode (**¶¶50, 51**).

12(canceled).

13(rejected). The apparatus of claim 1, wherein the controller and the video processor are operable to coordinate between automatic and manual selection of the area of particular scrutiny (**¶¶64 – 67**), wherein one of said manual selection and said automatic selection supersedes an other of said manual selection and said automatic selection (**Fig. 2**) for a limited period of time after said changing of the formatted display by the video processor when the selection criterion is met.

14(rejected). The apparatus of claim 13, wherein the selection criteria for said automatic selection include a color gamut value criterion having at least one threshold value such that a value meeting the threshold value criterion is selected for particular scrutiny (**¶¶74 – 77**).

15-25(canceled).

\* \* \*

## **MEANS OR STEP PLUS FUNCTION ANALYSIS SECTION**

None.

## **EVIDENCE SECTION**

None.

## **RELATED CASE SECTION**

None.